

2004 Statement
**The Culture of Research and Scholarship in Mathematics:
Joint Research and Its Publication**

The culture of joint research and its publication differs among disciplines, and this essay is meant to explain that culture for mathematics.

In most areas of mathematics, joint research is a sharing of ideas and skills that cannot be attributed to the individuals separately. The roles of researchers are seldom differentiated (in the way they are in laboratory sciences, for example). Determining which person contributed which ideas is often meaningless because the ideas grow from complex discussions among all partners. Naming a "senior" researcher may indicate the relative status of the participants, but its purpose is not to indicate the relative merit of the contributions. Joint work in mathematics almost always involves a small number of researchers contributing equally to a research project.

For this reason, mathematicians traditionally list authors on joint papers in alphabetical order. An analysis of journal articles with at least one U.S. based author shows that nearly half were jointly authored. Of these, more than 75% listed the authors in alphabetical order. In pure mathematics, nearly all joint papers (over 90%) list authors alphabetically.

These traditions differ from other areas of scholarship, especially those that frequently involve large numbers of researchers working on a single research project. In areas of mathematics that are more closely associated to such areas, the culture and traditions may blend together.

While these traditions are well-known to mathematicians, they are often misunderstood by other scholars whose traditions differ. Occasionally, this works against young mathematicians—especially those with names near the end of the alphabet.